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APPLICATION OF REMOTE SENSING
FOR FISHERY RESOURCE
ASSESSMENT AND MONITORING

SKYLAB EXPERIMENT NO. 240

CONTRACT NO. T-8217B

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INTRODUCTION

This Progress Report is the first of a monthly series required by the Statement of Work (SOW) for the Investigation of Skylab EREP Data, NASA Headquarters Proposal Registration No. 240, entitled "Application of Remote Sensing for Fishery Resource Assessment and Monitoring". The fishery resource under investigation is oceanic gamefish.

The period of the report is 1 May to 8 June 1973. Notification of contract intent was received during the last week in April 1973.

The scope of the experiment is set forth in the Project Plan which was approved by the Principal Investigator and published on 18 May 1973 after two drafts had been issued for coordination. It includes a project overview; a technical approach; the scheduled activities with the milestone plan required by the SOW; and management and resources sections. Appendices are attached for data requirements and field operations.

OVERALL STATUS

The project is currently in the second investigation phase which provides for mission support. The first of the two field operations was conducted as scheduled on 1-3 June except that Skylab and earth survey aircraft did not participate and oceanographic data acquisition from surface platforms was curtailed. Planning is in progress for the second mission in September 1973.

a. Skylab Photography/Imagery. EREP data acquisition had been planned for 2 June 1973 when Skylab was scheduled to pass over the test site off the Gulf Coast on track 62. EREP Summary Telecorder Investigator messages were sent on 29 and 31 May giving project status of field operations based a 2 June Skylab overpass. On 1 June after field deployments were committed, it was learned that Skylab EREP would not be available on 2 June.

b. Aircraft Remote Sensing. The earth survey aircraft NC130B overflight was cancelled after it became known that Skylab EREP would not be available. The NASA/ERL E-18 flew a 100 mile transect over the test site on 2 June.

c. Oceanographic Data Acquisition. The NASA/ERL oceanographic research vessel acquired data at six stations along a transect in the test site on 2 June. Government and contractor observers embarked on five gamefishing boats and collected sea truth data concurrent with gamefish catches from 1 through 3 June. Operations of six Government chartered oceanographic boats were cancelled.

- d. Fisheries Data Acquisition. Private and chartered gamefishing boats operating out of Pensacola, Destin, and Panama City, Florida, reported data on a volunteer basis on gamefish catches in the test site from 1 through 3 June. Briefings were conducted for boat captains and port samplers on 31 May. Gamefish logs were turned in from twenty-one boats over the three day period.
- e. Data Processing. Data logs and load forms from the June mission are undergoing review and keypunch preparatory to input into the Skylab data bank. Laboratory analysis of sea water samples for salinity and chlorophyll content is in process.
- f. Project Review Meetings. The Principal Investigator conducted project review meetings as follows at MTF.

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| 2 - 4 May | - | The purpose of this meeting was to finalize the Project Plan for approval and issue. Prior to this meeting, NMFS was informed of NASA intent to award a project contract. |
| 22 May | - | This meeting was called to review field operating plans, make adjustments in transects for Skylab drift and establish checkpoints for mission go-no-go. |
| 6 June | - | Mission debriefing was conducted, field operating problems were discussed and strategy for the September mission was laid out. |

- g. Problem Areas. Problems which surfaced during the 6 June mission debriefing are operational in nature and are generally susceptible to correction by internal action.

Use of the Secchi disc to determine water transparency requires a technique that is not feasible for use on the smaller gamefishing boats, i.e., 35 foot length or less. The Forel - Ule color device permits bias on the part of the user in determining water color. Use of the devices will be re-evaluated prior the September mission.

Port sampling procedures need to be tightened so that negative fisheries data is not overlooked. More intensive briefings relative to use of gamefish and oceanographic logs is indicated. More advance preparation and greater participation by Government personnel at the local level is advisable. Radio and telephone communications were less than satisfactory and will be given more attention. For example, radio frequency checks will be scheduled prior to operations and a telephone message center will be formally established.

h. Significant Progress. The 2 June mission was conducted essentially as planned and scheduled except for those decisions beyond the control of the Principal Investigator.

RECOMMENDATIONS

Participation of EREP and earth survey aircraft in the September mission is highly recommended otherwise the project objectives can not be met. Correction of Skylab drift off track 62 will permit use of the test site as originally planned and maximum participation by game-fishing boats, operating out of Panama City, Destin, and Pensacola, Florida.

EXPECTED ACCOMPLISHMENTS

By the end of the next reporting period, it is planned to have plots, tabulations, and thermal charts based on quick-look of the the data from the June mission.

SIGNIFICANT RESULTS

No significant results of the project can be identified at this time. However, a quick-look at the 9 inch aerial color film and the 70mm color IR film taken aboard the E-18 at 10K ft. altitude reveals some water color variations over the flight path. This phenomena is vaguely evident even though both types of film were underexposed. There has been insufficient time since data acquisition to provide a quick-look analysis of the remainder of the data obtained.

SUMMARY OUTLOOK

The September mission is tentatively planned for 28 - 30 September but will be finalized when the track and timing of the 5-day cycle are established for SL-3.

September ground-truth and complementary data acquisition will be oriented around three pass days anticipating NASA/JSC decision to acquire data.

TRAVEL SUMMARY AND PLANS

A progress review meeting is scheduled for 27 June at MTF which will require travel of personnel from Miami and Panama City, Florida; and Pascagoula, Mississippi to MTF. Quick-look analysis of the June mission data will be discussed.